Professional Audio Service Bulletin

3M

Bulletin No.
Date

BULLETIN NO. 16

SUBJECT: Modification to Sync Amplifier Circuitry

APPLICABLE TO: All M-79, 8, 16 and 24 Track Recorders

PURPOSE: Eliminate possible meter deflections and monitor "POP" on track in sync when adjacent tracks are put into record

REQUIRED PARTS:

Component	Description	Mincom Catalog No.	Quantity per Board
Capacitor	560pf, 500V, 5%	83-1510-5122	1

PROCEDURE:

1. Remove Capacitor C-57 which is connected between the collectors of Q-30 and Q-24 (see figure 1).

2. Drill one hole using a .030/.035 inches, drill adjacent to the emitter connection of Q-24 (see figure 2).

CAUTION

DO NOT drill into the traces on the back of the board.

3. Install the new 560pf capacitor, designated C-57, between the collector of Q-30 and the emitter of Q-24 (see figure 2). Insert capacitor lead through new hole, then bend the lead to the emitter trace of Q-24, then solder.

4. Check Recorder alignment and adjust if necessary.

5. Change Instruction Manual schematics and parts list to reflect the new location of C-57 as indicated by figure 3.

November, 1974
GM: rb
RM-TSBA

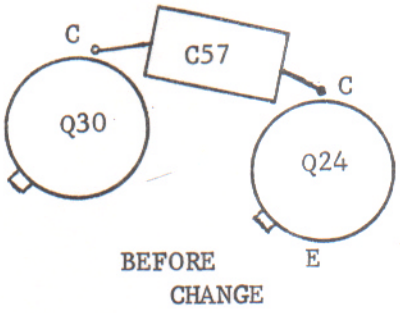

FIGURE 1

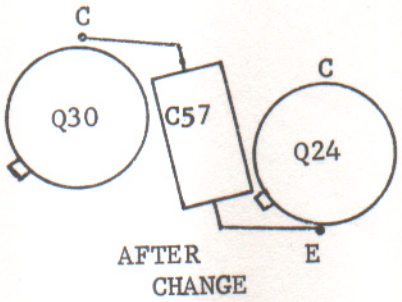

FIGURE 2

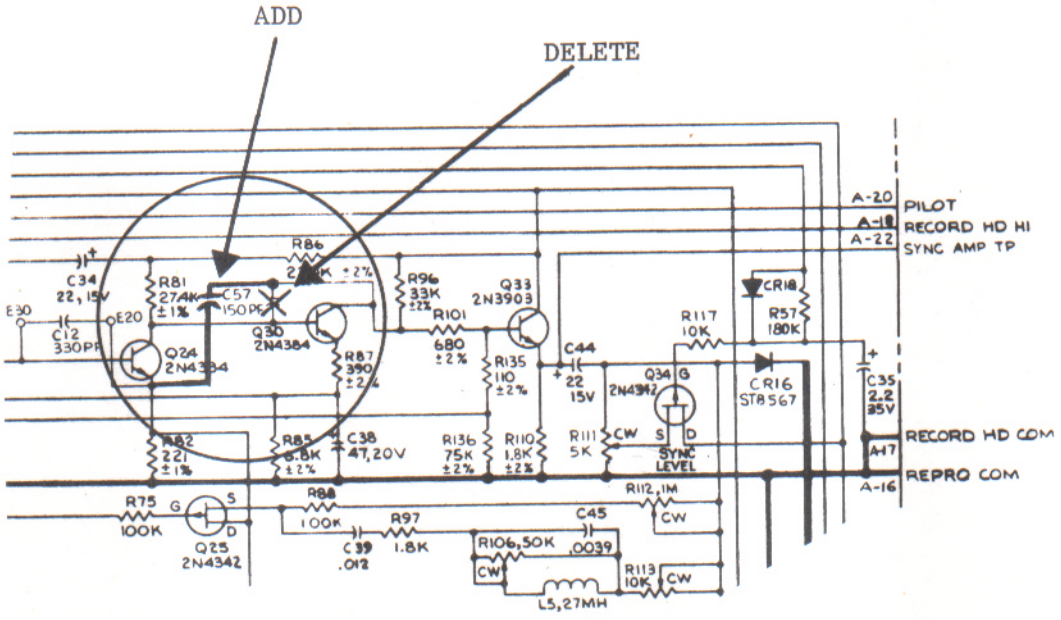

FIGURE 3

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BULLETIN NO. 17

Bulletin No.
Date

SUBJECT: Modification of Signal Electronics PC Board for DOLBY Interface.

APPLICABLE TO: All M-79 Recorders

PURPOSE: Prevent Oscillations of Signal Electronic when DOLBY unit is disconnected.

REQUIRED PARTS:

Component	Description	Mincom Catalog No.	Quantity per Board
Capacitor	.001μf, 1000V, 10%	83-1510-1024	1
Resistor	15 ohms, 1/2W, 2%	83-1520-7267	1
Teflon Tubing	(for the insulation of component leads)		As Required

PROCEDURE:

1. Drill four holes .041/.046 inches in diameter at points indicated on figure 1.

CAUTION

When drilling holes adjacent to circuit traces, do NOT drill into the trace.

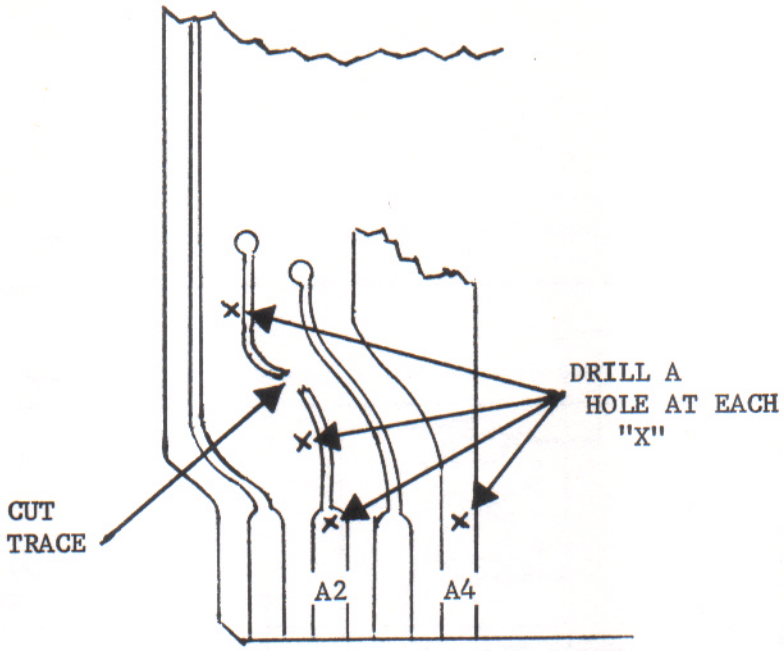
2. Cut the printed circuit trace as indicated on figure 1.

3. Install the capacitor, designated C-62 in the holes drilled in the finger contacts (see figure 2). Insure the leads lie flat against the board to prevent shorts to the board brace.

4. Install the resistor, designated R139, as indicated in figure 2. Bend the leads to make contact with the trace on the back of the board and solder. R-139 must be bent as shown to prevent accidental short circuits and to permit the board to be installed in the Recorder.

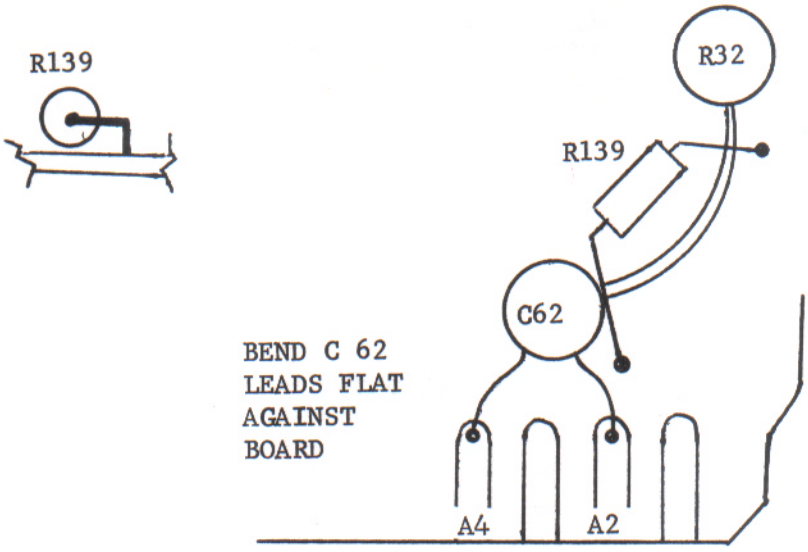
5. Change Instruction Manual schematics (see figure 3) and parts list to reflect C-62 and R-139.

GM;rb
November, 1974
RM-TSBA



BACK OF PC BOARD

FIGURE 1



FRONT OF PC BOARD

FIGURE 2

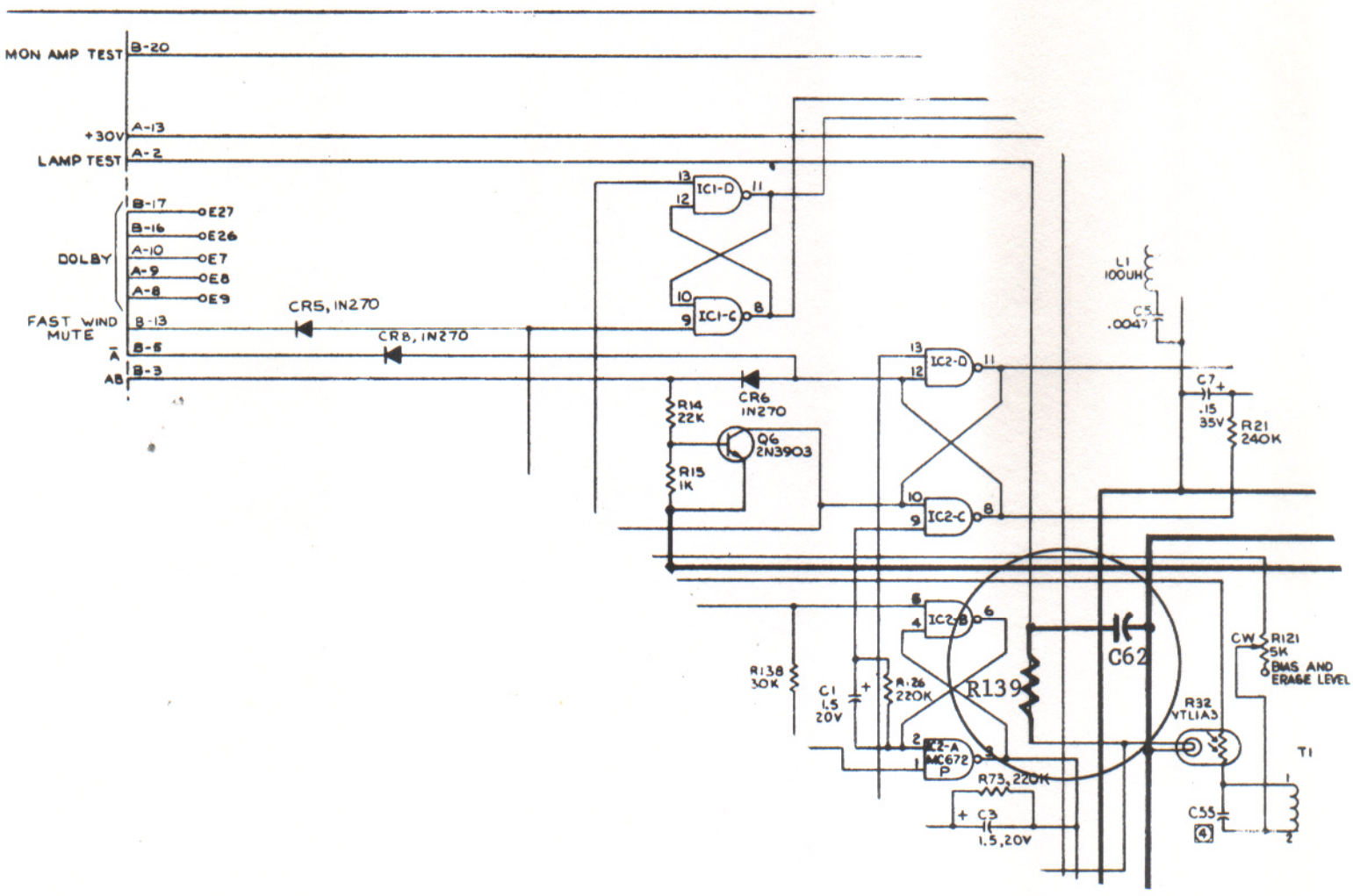

MON AMP TEST
B-20
+30V
A-13
LAMP TEST
A-2
DOLBY
B-17
B-16
A-10
A-9
A-8
E27
E26
E7
E8
E9
FAST WIND MUTE
B-13
B-6
B-3
CR5, IN270
CR8, IN270
CR6 IN270
IC1-D
IC1-C
IC2-D
IC2-C
IC2-B
IC2-A MC672 P
R14 22K
R15 1K
Q6 2N3903
R138 30K
C1 1.5 20V
R126 220K
R139
C62
R73, 220K
C3 1.5, 20V
L1 100UH
C5 .0047
C7 .15 35V
R21 240K
CW R121 5K BIAS AND ERASE LEVEL
R32 VTL1A3
T1
C55

FIGURE 3

#18

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Bulletin No. 18

: Installation of Replacement Capstan Motor Assemblies
Cat. No. 83-5920-2020

BLE TO: 8, 16 and 24 Track M-79 Recorders

: Modify Head Connector Mounting to Minimize Motor Noise Pickup by Head Cables.

RE:

Remove old motor assembly as follows:

a. Remove four 4-40 screws securing belt guard and remove bottom half of belt guard.

b. Remove capstan drive belt.

c. Remove screw securing flywheel and remove flyweel (holding capstan on top of transport to prevent its turning).

d. Remove upper half of belt guard by removing screws securing it.

e. Disconnect capstan motor connector J-7.

f. Remove two cable clamps which secure head cables to motor assembly. (Save clamps)

g. Remove capstan motor assembly by removing four screws securing it to transport (2 screws on each side).

Removal of old head connector brackets. (Complete work on reproduce bracket before starting on record side.)

a. Disconnect head connector(s) and move aside.

b. Remove three screws holding reproduce connector bracket to transport. Save screws for reuse in step 3b.

c. Remove and save 2-56 posts and nuts securing connector(s) to bracket. Make a note of male post location in reference to pin number on connector, for ease in reassembly.

d. Old bracket will have to be cut in order to remove connector(s). Be careful head cable is not nicked.

3. Installation of new head connector brackets, 83-3320-2963 right bracket and 83-3320-2964 left bracket.

   a. Mount connector(s) on new bracket in reverse order of removal making sure of locater pin position as noted in step 2c.

   b. Install new bracket assembly onto transport. (Figure 1)

   c. Reconnect head connector(s). (Figure 2)

4. Repeat steps 2 and 3 above for bracket on record side.

5. Install replacement capstan motor assembly leaving mounting screws loose.

6. Reinstall top half of belt cover.

7. Reconnect motor connector - J-7.

8. Reinstall flywheel - hold capstan to prevent turning.

9. Reinstall capstan belt and refer to section 4-30 of the manual for belt tension adjustment.

0. Reinstall lower belt cover.

1. Install head cable mounting bracket 83-3320-2962 as shown (Figure 3). Use existing screw on right side, use 8-32 x 1/2" screw on left side.

2. Attach head cables to bracket using clamps removed in step 1f. Use 10-32 hardware furnished (Figure 3).

3. Install a spring from each head cable bundle to rear of transport wrap around (See Figure 3).

4. Remove transport cover (scalp plate) to allow access to capstan servo p.c. brd.

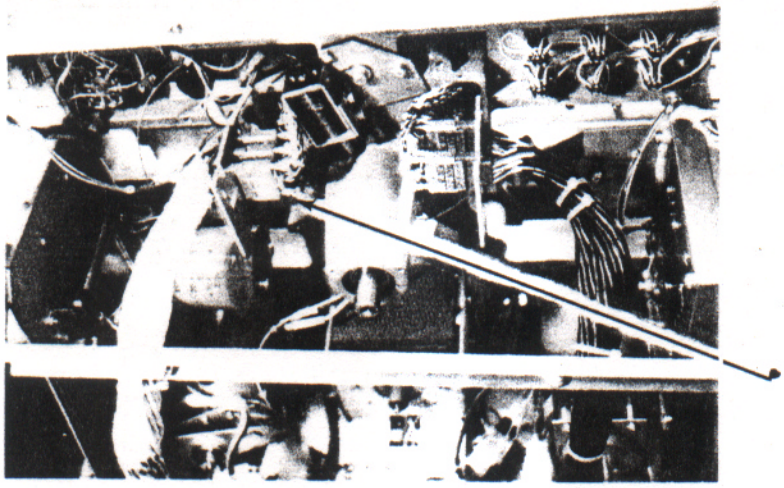
5. Perform servo adjustments in sections 4-16 and 4-17 of manual - refer to section 4-18 to change speed range if necessary.

6. Replace transport cover.

Figure 1

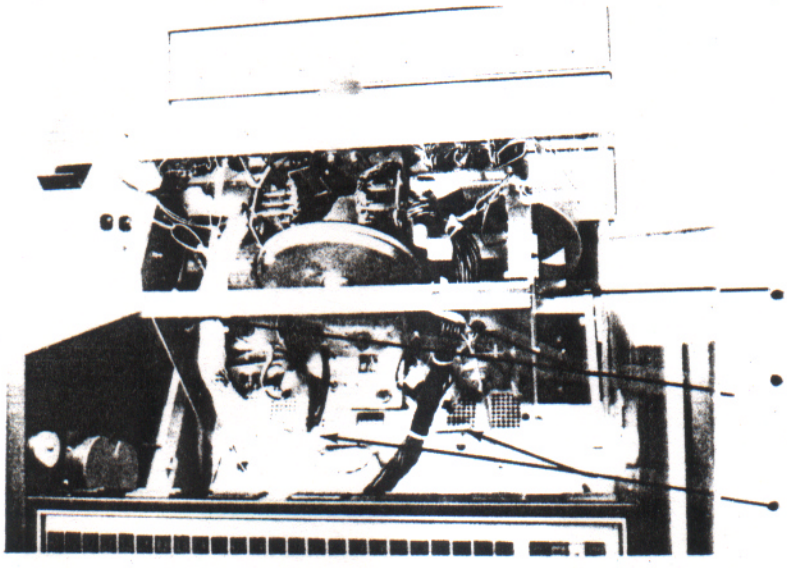
Arrow points to reproduce-connector mtg bracket

Figure 2



Arrow shows head connectors reconnected

Figure 3



Head cable support bracket

Head cable clamp

Head cable slack preventing springs

Professional Audio Service Bulletin

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Bulletin No. 19

Bulletin No.
Date

MODIFYING M-79 FOR IMPROVED HIGH FREQUENCY RESPONSE AT 7½ IPS

PURPOSE: To preclude the necessity of readjusting bias when switching between 7½ ips and 15 ips.

NOTE: If machine is used at 30 ips or CCIR with these modifications, C-23 should be shorted with a jumper wire.

PARTS NEEDED PER TRACK:

K-A	1 ea.	Reed Relay - SPDT - 24-28V 83-1550-3620-1 or equivalent	$38.00 Ea.
CR-A		1N4004 Diode 83-1530-0151	.35 Ea.
R-13		33K ¼ watt resistor 83-9520-2109-1	.45 Ea.
R-A		750 ohm ½ watt resistor 83-1520-7357-9	.35 Ea.
R-41A		200 ohm variable resistor 83-1520-1572 .750" x 1.750" perf brd or pc brd (see figure 2)	5.30 Ea.

PROCEDURE:

1. Remove Q-20, R-13, R-19, CR-9 and discard.
2. Remove any jumper connected to points E-10 through E-13.
3. Remove TP-2 (white) from board. Use care in not lifting pads from pc board (see figure 1).
4. R-41-A will be mounted in place of TP-2. Clip off rear lead of R-41-A. Drill a hole midway between and slightly above TP-2 mounting holes. This hole and forward most hole will be used to mount R-41-A (see figure 1).
5. Locate trace running from R-42 to wiper of R-41. Cut this trace about an inch from R-42.
6. Drill a hole behind bottom lead of C-14 (erase trimmer). Do not drill through any traces.

7. Locate same trace as in Step 5 and drill a hole into this trace between C-14 and Q-16 (see figure 1).

8. Mount relay K-A on a piece of perf board and mount the perf board to the mounting screws of Q-16 and Q-17 using two 6-32 nuts (see figures 1 and 2).

9. Install new R-13 (33K ohm).

10. Install CR-A into holes from which R-19 was removed.

11. Install R-A (750 ohm) between E-11 and E-12.

12. Connect a pair of wires to coil of relay K-A and route across top of board to terminals E-12 and E-13. Connect one wire to E-12 and the other to E-13.

13. Connect a wire from the wiper of K-A to R-42. Connect to the end of R-42 closest to the relay.

14. Connect a wire from the normally closed contact of K-A to trace going to wiper of R-41 through hole drilled in Step 7 above.

15. Install R-41-A in location vacated by TP-2 (a drop of selastic will hold it in place).

16. Connect a wire from the normally open contact of K-A (through hole drilled in Step 6 above) to the wiper of R-41-A.

17. Connect a wire from front term of R-41-A to front term of R-41.

18. Fill in (with solder) the rear mounting hole of TP-2. This trace must not be broken.

19. Place signal brd on extender card and install in machine.

20. Place machine in record at low speed and monitor the wiper of R-41 with scope. A bias waveform should be visible.

21. Switch recorder to high speed (maintaining record mode); bias waveform should disappear. Switch scope to wiper of R-41-A; bias should be present.

NOTE: If bias is the reverse of Steps 20 and 21, the wires going to the normally open and normally closed contacts of K-A should be reversed.

22. Monitor TP-1 with VTVM (record mode) and adjust R-121 for 2.4V RMS (2 volt on 24 track).

    NOTE: Before continuing with record alignment, reproduce alignment should be checked and adjusted if necessary.

23. To align bias the upper bias adjust R-41 is used for low speed and the lower R-41-A for high speed.

24. The bias must be adjusted (using appropriate pot) for 5db overbias at 15kHz for any speed (including 7½ ips).

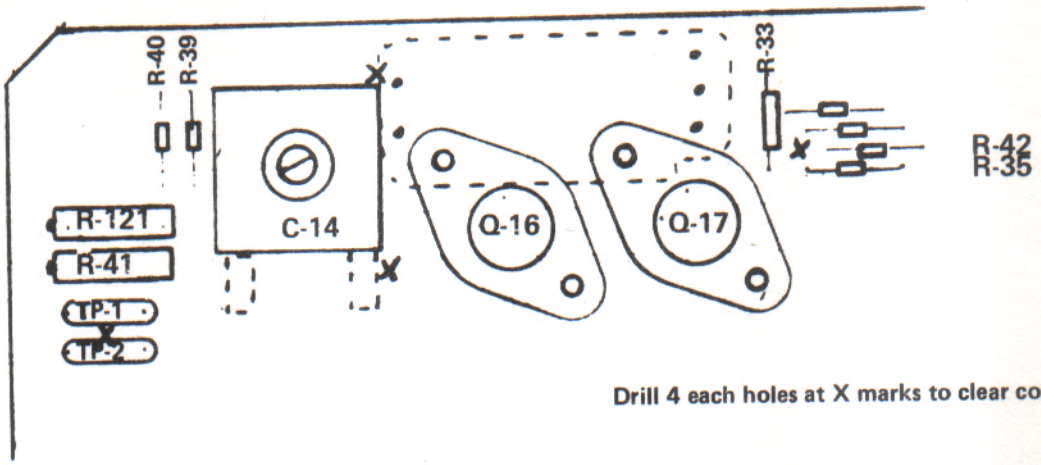
    Typical record response with above bias settings are:

    7½ ips (-10VU input) flat to 15kHz -3VU 19kHz
    15 ips (0VU input) flat to 20kHz -3VU 24kHz
    30 ips (0VU input) flat to 20kHz -3VU 24kHz

JDC:lj

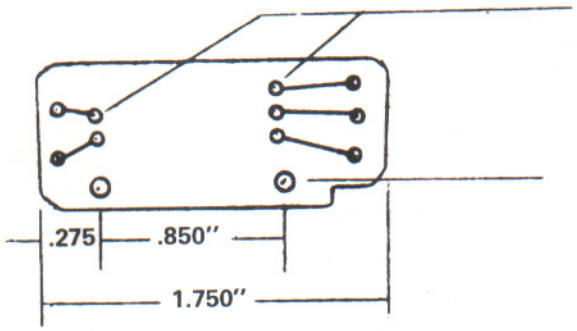
FIGURE 1

Top of Signal PCB - actual size



Drill 4 each holes at X marks to clear connecting wires.

FIGURE 2



Relay mounting holes - relay pin clearance
(For relay in parts list)

.144" holes 2 places

Relay mounting board actual size - top shown

FIGURE 3

New Circuit Configuration